GUIDE TO ADOPTING AN INTEGRATED AND INCLUSIVE WATER SECURITY FRAMEWORK

INTRODUCTION

More than 2.3 billion people live in water-stressed countries, and half the global population lives in a highly water-stressed region for at least one month of the year (WRI 2023). Climate change is exacerbating both water-related hazards like floods and droughts, and water scarcity, including impacts on terrestrial water storage – the water held in soil, snow, and ice. Yet by 2050, the world is projected to demand 20 to 25 percent more water – and the number of people suffering from severe water scarcity could increase by 40 percent by the end of this century. Water security is thus a global priority – and one that the US Global Water Strategy embraces.

However, achieving subnational water security is a complex challenge, requiring action at multiple levels of government and the water sector, across multiple disciplines and competing users such as agriculture and energy, and necessitating constructive engagement with many types of stakeholders. Clear data, information, and analysis can be powerful instruments for bringing these disparate actors together for collaborative water security planning work.

This document presents the Integrated and **Inclusive Water Security Framework (IIWSF)**, an approach to structuring collaborative, multi-stakeholder water security planning – underpinned by data and evidence. The IIWSF was first developed and implemented by the United States Agency for International Development (USAID) through its Safe Water Project for use in water security planning in the Philippines, but the framework is widely applicable and adaptable to other countries facing water insecurity.

UN-WATER DEFINITION OF WATER SECURITY

The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability.

WHY WAS THE IIWSF IMPORTANT FOR THE PHILIPPINES?

The Philippines has 421 rivers, 221 lakes, significant groundwater and yearly rainfall averaging 2,400 mm, yet variations in rainfall, geographic disparities, growing water demand, and periodic El Niño patterns have led to frequent shortages. By 2020, national water availability was just 1,300 m^3 per capita, below the 1,700 m^3 per capita threshold for water stress adopted by the United Nations. More concerning is that most of its highly urbanized cities, also the socio-economic hubs, are at absolute scarcity level. Inadequate water affects basic needs and well-being of the people and can be a binding constraint for socio-economic growth.

FOUNDATION OF AN INTEGRATED AND INCLUSIVE WATER SECURITY FRAMEWORK

The foundation of an Integrated and Inclusive Water Security Framework builds from the principles of the Integrated Water Resources Management (IWRM), a long-accepted approach to water resources management, and the US Global Water Strategy. IWRM is designed to help various users, at the basin scale, balance and prioritize the use of finite water resources sustainably. The integrated, multi-sectoral approach deliberately considers the needs of humans and ecosystems and emphasizes participatory governance approaches – which are important to the equity and sustainability of solutions.

An IIWSF builds on the IWRM tenets of 1) social equity, 2) economic efficiency, and 3) environmental/ecological sustainability, but takes a more comprehensive and long-term view of water risks and uncertainties, such as climate change impacts. The IIWSF advocates developing and using current and reliable weather and climate information, adopting policies and actions that can adjust to future scenarios, and identifying concrete and customized outcomes and practical actions different stakeholders can take.

An IIWSF can ensure holistic and integrated approaches by structuring threat analysis, participation, and objectives according to service provision, resource management and governance – while also looking for their interconnections within the larger water system.

GLOBAL WATER PARTNERSHIP DEFINITION OF IWRM

IWRM is a process which promotes the coordinated development and management of water, land, and related resources to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment.

THE IIWSF ADOPTED THE PRINCIPLES OF IWRM AND THE STRATEGIC OBJECTIVES OF THE US GLOBAL WATER STRATEGY

IWRM

- Effective Regulation for Water Security and Ecosystem Health
- Sustainable Water Resources and Responsive Services for Present and Future Needs
- Improved Effectiveness, Accountability, and Synergy Among Water-Related Institutions
- Adaptive and Proactive Responsive to Future Challenges

US Global Water Strategy

- Strengthen Water and Sanitation Sector Governance, Financing, Institutions, and Markets
- Increase Equitable Access to Safe, Sustainable, and Climate-Resilient Drinking Water and Sanitation Services and Adoption of Key Hygiene Behaviors
- Improve Climate-Resilient Conservation and Management of Freshwater Resources and Associated Ecosystems
- Anticipate and Reduce Conflict and Fragility Related to Water

Three pillars of water security:

PILLAR 1: Water Resources Management. Long-term water resource availability originates upstream, as agricultural practices, protected areas management, water diversions, and upland communities drive change within the watershed. Active watershed councils and river basin organizations are key in safeguarding water quality and quantity.

PILLAR 2: Increased access to resilient and equitable water supply and sanitation services. Upstream stewardship (Pillar 1) comes to fruition in downstream access to services offered through reliable and resilient service providers supported by a responsive local government. Improved water availability is also dependent on Pillar 1; reliable and resilient service providers, water-wise households and committed local government and private sector actors, who are conscientious consumers of water services and support a green environment through responsible wastewater/fecal waste management.

PILLAR 3: Strong sector governance. Good water and sanitation sector governance cuts across water resources management and water and sanitation service provision and applies the three IWRM principles of social equity, economic efficiency, and environmental sustainability. Accountable national and local government actors play their part in planning and coordinating services proactively and facilitating service expansion and resource protection through policies, regulations, and investment.

APPLYING AN IIWSF APPROACH TO WATER SECURITY PLANNING

Water security planning is a participatory process that aims to identify, evaluate, and select interventions that increase water security. The planning examines how to mitigate risks, the potential benefits and impacts of different interventions, and the ability of interventions to respond to uncertainties. The IIWSF can help develop a Water Security Plan, once certain fundamental parameters are in place. These, listed and then described, are:

- Agreement on the scale and space to be addressed by the plan
- Commitment to a participatory process
- A data-informed understanding of the threats to water security within that area

AGREEMENT ON THE SPACE AND SCALE. A prerequisite to planning is to define the target geography, which may be a basin or sub-basin but may also be defined by political or administrative boundaries. Defining this space will facilitate determining what institutions need to be engaged, and the relevant threats and hydrological parameters. Agreement on the space also helps to identify the lead institution. While a participatory process, water security planning necessitates the identification of a lead institution with convening power across the many stakeholders involved in the three pillars. Finally, temporal boundaries may be useful for assessing future threats and aligning with other government policy horizons.

SELECTING THE RIGHT ADMINISTRATIVE LEVEL FOR WATER SECURITY PLANNING IN THE PHILIPPINES

In the Philippines, water security planning was focused on the provincial level. The province's broad mandate opens opportunities to steer and catalyze long-term solutions, and it is in the best position to undertake water supply and sanitation projects that require economies of scale, such as surface water bulk supply development and septage management.

With a mandate across municipal boundaries, the provincial government can coordinate and facilitate cross-cutting activities such as watershed management, water resources monitoring, inter-local government and multi-stakeholder dialogues for resource sharing, data management, and identification and prioritization of investments for conserving shared forest lands and watershed areas. Moreover, provinces can lead governance and economic regulatory reforms.

COMMITMENT TO AND STRUCTURE FOR A PARTICIPATORY PLANNING PROCESS. Committed and sustained stakeholder participation legitimizes efforts to improve water security and helps ensure informed decisions and smoother implementation. Once the target geography is known, an effort should be made to identify the individuals and institutions that are either influential in water use decision-making or affected by water use decisions. Major stakeholder groups should appoint or elect representatives to participate in the process. Other potential participants, such as donors, learning institutions, financial institutions, and investors, can help support and guide the process, including through working groups on specific technical topics. Continuity of core participation is important, as is establishing protocols for participation and communication.

A particular effort may be needed to identify and include historically under-represented users, including support for building skills such as collaborative decision-making and facilitation. Transparency of the process is also important, including regular communication or community forums to engage civil society.

DATA-INFORMED IDENTIFICATION AND ANALYSIS OF THREATS. Building a water-secure future begins with a water security assessment. At the core of water security assessments are hydrologic studies, and vulnerability and climate risk assessments. These provide critical information for water security planning and help guide stakeholders toward appropriate responses such as protecting groundwater recharge zones, regulating construction in recharge areas, regulating conversion of high recharge areas to agricultural zones, and developing climate-resilient infrastructure in key locations. This data is a prerequisite to developing a water security plan.

HYDROLOGIC STUDIES AND VULNERABILITY ANALYSIS: KEY INPUTS TO WATER SECURITY ASSESSMENTS

Hydrologic Studies

Within a delineated watershed, a hydrologic study calculates the rivers' projected future flows (i.e., cubic meters per second or m3/s) under different climate scenarios. The dependable flow calculation serves as the threshold for permitting extraction. The study estimates when and where an area may become water resource deficient by matching water availability with the water demand.

The study also delineates recharge zones across the watershed, accounting for variations across location and time. Groundwater recharge rates determine the estimated volume of precipitation that infiltrates underground, replenishing the aquifers.

Vulnerability and Climate Risk Assessments

A vulnerability and climate risk assessment is a systemic process to identify potential hazards to people, the natural and built environment, climate-related events, trends, and projections. Vulnerability encompasses three dimensions: degree of exposure to climate stressors, sensitivity to climate stressors, and adaptive capacity.

The second stage of data collection focuses on knowing how much water is currently available and the threats– man-made and natural - that will affect future availability. Data on a threat's root causes, characteristics, and impact scenarios are essential to developing effective plans and mobilizing action. The number, type, and interconnectedness of water security threats may seem overwhelming. The IIWSF simplifies the process by structuring threat identification and analysis according to the three pillars of water resources management, water and sanitation services, and sector governance. While each threat is associated with a pillar, it is important to note that a given threat may affect multiple themes. For example, water scarcity is an issue of water resources management and sector governance and a driver of a lack of resilience in water supply services.

EXAMPLES OF WATER SECURITY THREATS IDENTIFIED IN THE PHILIPPINES

Threats to water resources management

- Lack of data on availability and quality of water resources
- Fragmentation of transboundary water resources management roles

Threats to water and sanitation services

- Infrastructure limitations, such as low capacity of sources and production facilities, poorly designed network, including undersized pumps or pipes; lack of wastewater management facilities
- Non-revenue water

Threats to water and sanitation sector governance

- Weak enforcement of economic regulations, including service standards and rational tariff setting
- Partial or non-implementation of laws and plans

Collecting and analyzing the data and information necessary to identify threats and to inform effective planning is a multi-stage process. The first stage is an inventory of existing data and identifying data sources that must be gathered to validate identified threats. These initial data sets are generally secondary and available from reports, files, and documents from stakeholders but are often scattered, outdated, incomplete, or unreliable.

DEVELOPING THE WATER SECURITY PLAN

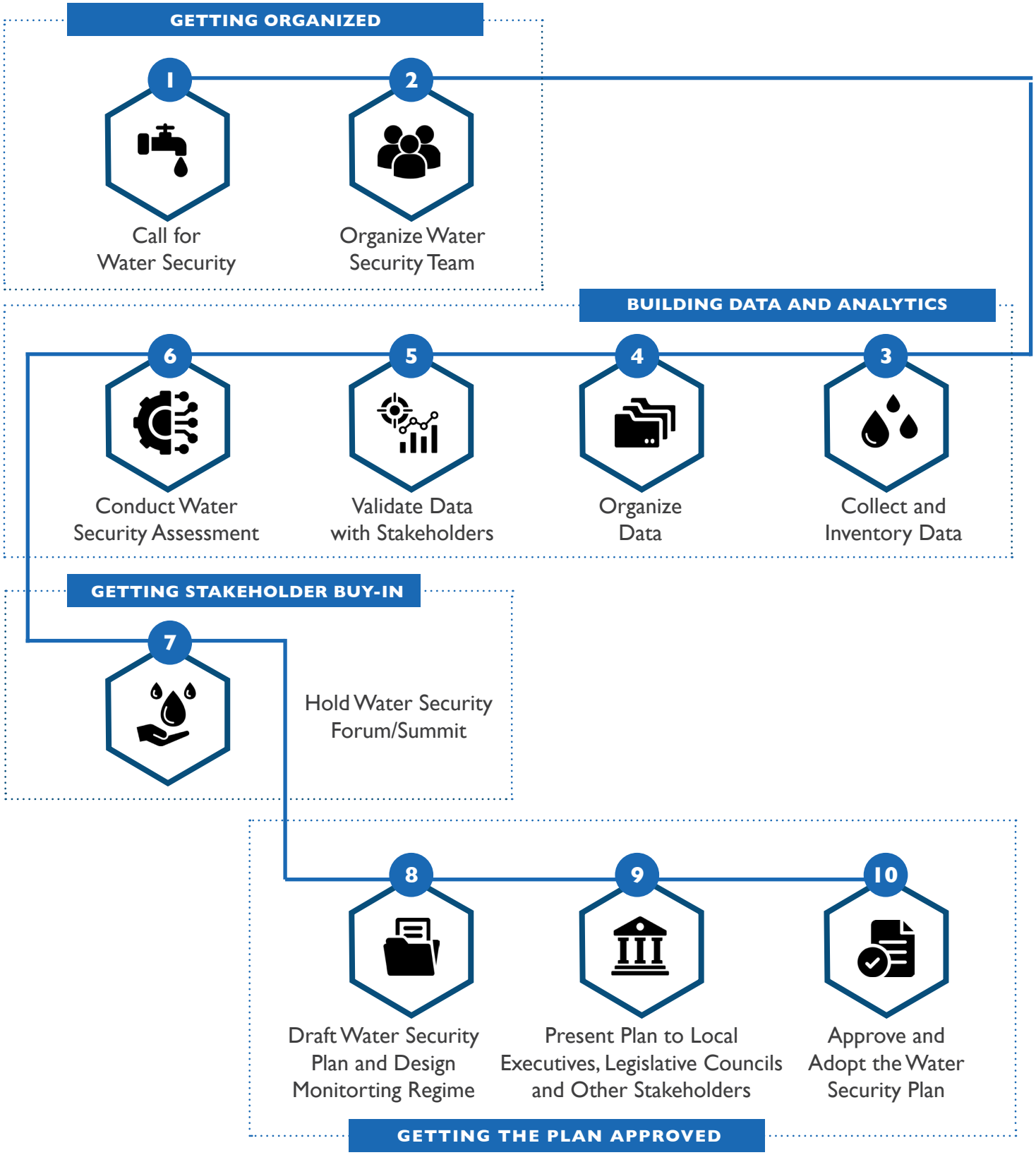

FIGURE 1. STEPS IN THE WATER SECURITY PLANNING PROCESS

This section summarizes the water security plan development process as undertaken by the USAID Safe Water Project. An outline that users can adapt for their planning is provided in the Annex.

Process Overview

Figure 1 shows the steps needed to guide the formulation and implementation of a Water Security Plan. Each of the steps is described in turn.

STEP 1: CALL FOR WATER SECURITY

Water security planning must be a stakeholder-driven process, responsive to demand, and supported by the government – whether local or national. It may be important to develop a memorandum of understanding or similar agreement to articulate the commitment of stakeholders to water security.

THE CALL FOR WATER SECURITY IN THE PHILIPPINES

In the Philippines, it took a public commitment to water security by the national government – in the form of the Philippine Water Supply and Sanitation Master Plan – to trigger holistic action. The Provincial Government then set water security planning in motion, convening and mobilizing local governments and setting the agenda for water security planning.

STEP 2: ORGANIZE WATER SECURITY TEAM

The convening authority, whether a government agency, river basin management committee, or an non-government organization (NGO), facilitates the process by organizing leadership, and planning and implementation team(s). These teams are responsible for ensuring the validation of study results, organizing stakeholder consultations, documentation of meetings and activities, supervising consultants and technical advisors, liaising with government authorities and donors, and preparing and implementing the plan. An important duty of the water security implementation team is to set a timetable and steps for the planning and implementation process. It may be advantageous to organize short-, medium--, and long-term actions depending on the severity of the threat and the complexity of the necessary response.

PLANNING RESPONSIBILITIES IN THE PHILIPPINES

An appointed Council approves and oversees the implementation of the Water Security Plan. The Council comprises local chief executives of the provincial cities and municipalities and representatives from government offices responsible for development, planning, public works, and local government. The implementation team includes provincial and local government representatives handling, for instance, water and sanitation service provision, disaster management, forest, and watershed planning.

STEP 3: COLLECT AND INVENTORY DATA

This is the second stage of a more detailed and targeted data development, collection, and analysis, often supported by technical specialists, modelers, and research institutions, and results in a geography-specific Water Security Assessment.

At this stage, data collection is of secondary data – readily accessed through stakeholder and donor reports, documents, global datasets, and files. This rapid process provides an initial baseline understanding and uncovering data gaps. Stakeholders can be instrumental in identifying data sources, preliminary identification of data gaps, and qualitative insight into the prevailing systems for accessing, using, and managing water. This initial data collection will yield a preliminary list of perceived water security problem areas and the data gaps that need to be filled to ratify threats and commence planning (Table 1 lists the minimum information requirements).

TABLE 1. INFORMATION REQUIREMENTS OF THE WATER SECURITY PLAN

TECHNICAL TOPIC	INFORMATION TYPES	ILLUSTRATIVE SOURCE
Water Resources Management		
Priority watersheds	Total area and maps of identified watersheds	• Hydrological and water quality assessments • Environmental flow assessments • Environmental impact assessments • Water allocation plans • Flood plain maps • Databases from weather, hydrometric, and water quality stations • Risk, vulnerability, and climate change assessments
Forest cover	Forest cover (hectares) per watershed over two time periods	
Recharge areas of watersheds	Delineated recharge zones from hydrologic studies	
Groundwater recharge rates per watershed	Calculated from hydrologic studies using temperature, rainfall, drainage, density, land cover, slope gradient, and lithology of the identified watersheds	
Surface flows of rivers		
Water Supply and Sanitation		
Water sources	Number, location, and condition of water sources	• Land use maps, geospatial analysis • Service provider, Regulator, and Ministry records of service coverage and quality • Demographic and health surveys • National, regional, and local development plans • Census reports • Satellite imagery
Water service providers	Number of providers by type (municipal, rural, cooperative, private, etc.), service challenges	
Access to water supply services	Number of users by service category, water quality, service issues, etc.	
Access to sanitation services	Number of users by category of service	
Water-borne diseases	Number of cases (diarrhea, typhoid, dysentery, etc.)	
Water Sector Governance		
Institutional framework	Key institutions, roles, functions, and capacities. Linkages to adjacent sectors	• Political economy analysis • Policy review • Budget and spending analysis • Institutional and systems mapping • Organizational assessment • Capacity building needs assessment • SDG reporting
Existing and planned legal and regulatory framework	Relevant laws, policies, and regulations	
Government commitments	Strategic and development plans, IWRM plans	
Planning and budget parameters	Budget allocations and expenditure	

ADDITIONAL CONSIDERATIONS FOR DATA COLLECTION

The collaboration of water users and government agencies around data collection and gap identification can further strengthen their relationship and the credibility of the exercise. Whether donors or stakeholders are interested in the same data, whether existing efforts can be leveraged, or whether cost-share or collaboration is possible should be considered. In some local communities, citizen scientists can sometimes be utilized to help resolve data gaps.

STEP 4: ORGANIZE DATA

Information should be organized according to the three pillars – water resources management, water and sanitation services, and water governance – and presented in a way that is objective and understandable. Data gaps are identified, and targeted studies are launched with targeted stakeholders.

STEP 5: VALIDATE DATA WITH STAKEHOLDERS

Data needs to be validated with stakeholders through workshops, Focus Group Discussions, Key Informant Interviews, and interviews. This step intends to validate or refine the identified water security problem areas and elicit proposed interventions and measures to address these threats.

STEP 6: CONDUCT WATER SECURITY ASSESSMENT

The Water Security Assessment provides the definitive information base to be agreed upon among stakeholders, informs planning, implementation, and monitoring, and provides the evidence for necessary investments, policies, regulations, and enforcement actions.

Stakeholders should develop a set of proposed actions for each set of risks and goals – this can be a challenging process that might start in the working group meetings but require additional time and iterations. The water security assessment synthesizes the data and information to provide an evidence-based understanding of the water security issues in the target geography. The assessment findings will detail the key threats, identify the root causes, and desired water security outcomes. Actions may include governance and regulatory improvements, social and behavior change, efficiency and service quality improvements, climate resilience activities, and nature-based solutions. The action identification should consider past experiences (successes and failures), potential for scale and sustainability, cost/benefits, implementation capacity, possible unintended consequences, potential to leverage existing activities, and resilience to shocks and stresses. The process should be inclusive, and the ultimate selection methodology should be transparent and clear. The water security assessment is used to prepare a water security action plan. The leadership body should review and approve the assessment.

COMPONENTS OF A WATER SECURITY ASSESSMENT

The assessment describes:

- threats to water security and their impacts;
- prioritization of threats;
- identification and prioritization of proposed measures and interventions to respond to the threats;
- investment needs and support required;
- assignment of responsibilities; and
- a results framework to guide monitoring and implementation of the plan.

Prioritization of risks and associated actions should be considered carefully to ensure realism, resource alignment, and potential for impact.

STEP 7: HOLD WATER SECURITY FORUM/SUMMIT

A Water Security Forum is critical in converting the assessment to a Water Security Plan. The Forum gathers stakeholders across various sectors to review the assessment, solicit their inputs and obtain their buy-in and commitment to the planning process.

STEP 8: DRAFT THE WATER SECURITY PLAN AND AND DESIGN MONITORING REGIME

The Plan that will be drafted by the planning team, will define a set of interventions that address identified and prioritized risks. It identifies a planning timetable, specific activities and responsibilities, funding requirements, and indicators and targets to ensure monitoring of progress and performance. Preferred solutions should be costed, and strategies identified for mobilizing funds in support of successful implementation. The draft should also include the mechanisms for implementing, monitoring and evaluating the Plan after its approval. Implementation will transform strategic interventions into practical actions, while monitoring will enable real-time tracking of progress, facilitating early identification and resolution of potential issues. Evaluation will assess the plan's effectiveness by measuring outcomes against targets as outlined in the Results Framework from Step 6, and will provide insights for ongoing improvements. The Plan should also address the adaptation process and stakeholder communication channels. The leadership body will then review and provide more insights into the draft before endorsing its presentation to various legal bodies/entities and other stakeholders.

STEP 9: PRESENT PLAN TO LOCAL EXECUTIVES, LEGISLATIVE COUNCILS AND OTHER STAKEHOLDERS

In preparation for the adoption and implementation of the Plan, the final draft will be presented and discussed with a target audience with the power, authority, and responsibility to allocate and expend resources necessary for its successful implementation. More inputs may surface during the process, which will be incorporated into the Plan before its adoption.

STEP 10: APPROVE AND ADOPT THE WATER SECURITY PLAN

The final Water Security Plan will be submitted to the relevant approving body, and implementation will begin.

IMPLEMENTATION OF THE PLAN

After the Plan's approval, the local body's leadership will facilitate its execution through a formal written order. Implementing the Plan involves adoption of policies, preparation of investment programs, resource mobilization (including local budget allocation and leveraging funds from other sources) and carrying out specific programs, projects and activities identified by the implementing units. The timing and frequency with which the implementing units will prepare investment programs, allocate funds, and identify specific actions will vary based on practices of the respective country and local governments.

MONITORING AND EVALUATION (M&E)

M&E is an essential component of the Plan's implementation. It ensures that the progress of planned interventions and their anticipated outcomes are regularly tracked, allowing stakeholders to assess the achievement of targets and identify any necessary adjustments to keep implementation on course. The local leadership body will provide the M&E framework, including key performance indicators and reporting templates as defined in the Results Framework discussed in Step 6 and incorporated into the Plan in Step 8. This leadership body will also designate the M&E group which may be composed of representatives from various local government offices. The M&E group will oversee the monitoring of progress across all implementing units.

ANNEX:
PROVINCIAL WATER SECURITY PLANNING IN THE PHILIPPINES

The Philippines, with support from the USAID Safe Water Project, developed a **Provincial Integrated and Inclusive Water Security Framework (PIIWSF)** and piloted plan preparation in two provinces, Negros Occidental and Sarangani. The framework integrates water supply and sanitation services with sustainable watershed management planning underpinned by governance reforms. The framework also vertically integrates the policies, strategies, and targets of the Philippine Water Supply and Sanitation Master Plan (PWSSMP) with the provincial government plans by using the eight key reform agenda of the Master Plan in framing the provincial plan's strategies and major interventions. This way, how the provincial plans contribute to the national targets and reform agenda will be apparent.

The following provides an account of the planning experience in the two pilot provinces in the Philippines.

STEP 1. CALL FOR WATER SECURITY. The preparation of the plan started with USAID Safe Water's presentation of the planning framework and the baseline assessment of the water supply and sanitation services access, results of the hydrology studies that determined available surface water, groundwater recharge, and high recharge areas, and the forest cover analysis to the provincial governors and their staff. Upon knowing the precarious state of the province's water sector, the governor and his team agreed to undertake integrated water security planning.

STEP 2. ORGANIZE WATER SECURITY TEAM. The governors then organized water security councils, designated the head and technical working groups or planning team members tasked with preparing the plan, and passed executive orders to mandate the plan preparation and urge all concerned units to cooperate. The PIWSP is developed through work at three levels: the Provincial Governor establishes a Water Security Council, which serves as the steering committee and designates a Technical Working Group (TWG) tasked with preparing the plan.

OUTLINE OF A PHILIPPINE PROVINCIAL WATER SECURITY PLAN

Understanding Water Security in the Province - Presents current situation in the province on access, quality of service, utility capacities and governance issues, water availability based on the results of the hydrology studies, forest cover analysis, and vulnerability and climate risk assessments, among others.

Planning Team - Describes the organizational set up for the formulation and approval of the plan, identify the group that will serve as the steering committee, plan formulation team and the approving body if separate from the local chief executive or steering committee.

Identification of Problems, Objectives, and Targets – The development of this section will benefit from a participatory and consultative process among a broad mix of stakeholders. Taking off from the situation analysis, this section identifies the core problems and the root causes thereof; from which the objectives and targets will be determined.

Priority Reforms - This section identifies the strategies that will address the core problems and achieve the objectives of the province. The eight key reform agenda of the PWSSMP are used to frame the strategies and key interventions of the PIWSP.

Results Framework - The results framework (RF) reflects specific conditions or changes that the PIWSP intends to achieve by realizing relevant interventions and measures within the plan's timeframe. It indicates time-bound aspirational targets corresponding to outcomes, intermediate results (outputs/milestones), and strategies. Through the RF, the planning team can articulate the chain of results from a particular intervention and how this leads to the achievement of the provincial objective.

Investment Requirements - Starting with the aspirational targets, this section identifies the programs, projects and activities that will achieve the desired results. The investment requirements are estimated, and financing sources and magnitudes of funding that can be mobilized from the local government budgets, national government grant programs, commercial loans, private equity or grants and user fees identified.

Monitoring and Evaluation – The M&E system is structured to have two levels, a progress M&E keeps track of the progress of interventions/ investments planned, and a results M&E that will determine the plan's effectiveness by measuring progress of performance indicators.

The TWG will be led by the provincial planning officer, a civil servant with a permanent appointment, and members shall include planning officers from the municipal governments and key stakeholders from the private sector, civil society, and academe. The approval of the plan rests with the province's legislative council. The Governor will chair the Council, and members shall include all mayors in the component cities and municipalities.

STEP 3. COLLECT AND INVENTORY DATA. The planning team identified and collected other data, such as maps of watersheds, land cover, surface water flows, groundwater recharge, and assessment of water service providers.

STEP 4. ORGANIZE DATA. The planning team then organized the data to analyze threats and core problems. Examples of data gathered and organized are:

WATER RESOURCE MANAGEMENT (WRM)	WATER SUPPLY AND SANITATION (WSS)
• Using the watershed boundaries and land cover data generated from the maps in the hydrological studies, a forest cover analysis was conducted for two periods at least five years apart. This analysis includes estimates of the deforestation rate and projections for years before complete forest loss. • Surface water flows and groundwater recharge in each watershed • Existing watershed management councils, groups, TWGs • Major rivers and historical description of physical condition/ appearance based on stories of surrounding communities • Groundwater sources (wells and springs) and brief descriptions of depth, discharge, water level, use • Historical records of water disasters	• Initial data on access to water and sanitation and population projections for the entire planning horizon were organized to show access by municipality/city and identify the most problematic municipality/city. • The planning team assessed service providers' capabilities to manage and operate water supply systems using the Water Utility Assessment Tool developed by USAID Safe Water, highlighting the challenges in service provision. • Historical records of water-borne diseases • Existing water-related committees, TWGs, groups • Groundwater sources (wells and springs) and brief descriptions of depth, discharge, water level, use • Historical records of water disasters

STEP 5. VALIDATE DATA WITH STAKEHOLDERS. The planning team then validated data through interviews with residents and village health workers or cross-referencing related local plans.

STEP 6. CONDUCT WATER SECURITY ASSESSMENT. The next step is the water security assessment, done through three (3) workshops with broad stakeholder participation. The planning team was divided into two groups: WRM and WSS. Each group brainstormed the issues and threats observed based on records and stakeholder validation. Each group used the Problem Tree Analysis from the broad list of threats to map out the causes and effects. They traced the root causes and core problems contributing to the current state of water insecurity across the province. Upon completing the problem tree, the plan objectives were then elucidated. Next the strategic interventions were identified, framed by the eight key reform agenda (KRA) of the PWSSMP (see Box on PWSSMP KRAs).

PHILIPPINE WATER SUPPLY AND SANITATION MASTER PLAN: KEY REFORM AGENDA

KRA 1: Establishing effective WRM and WSS sector institutions.

KRA 2: Strengthening the regulatory environment.

KRA 3: Creating and ensuring effective WSS services.

KRA 4: Balancing water supply and demand.

KRA 5: Building climat e resiliency.

KRA 6: Enabling access to funding and financing.

KRA 7: Managing data and information.

KRA 8: Driving research and development.

The planning team then identified the key indicators to measure the progress of the Water Security Plan and determined the targets. Based thereon, the investment requirements were identified. This exercise was iterative, as the planning team had to consider a reasonable level of budget allocation and other resources the LGUs could realistically mobilize.

STEP 7. HOLD WATER SECURITY FORUM/SUMMIT. The governor led a water summit with government representatives, business and local community leaders, people's organizations, and academic institutions to present the water security assessment, and the strategies and key interventions of the plan.

STEP 8. DRAFT WATER SECURITY PLAN AND DESIGN MONITORING REGIME. The planning team drafted the plan, considering the feedback received from the Summit.

STEP 9. PRESENT PLAN TO LOCAL EXECUTIVES, LEGISLATIVE COUNCILS AND OTHER STAKEHOLDERS. The draft was then endorsed to the Provincial Water Security Council for approval. The Council approved and endorsed the draft PIWSP through a Council Resolution to the Provincial Legislative Body for final approval.

STEP 10. APPROVE AND ADOPT THE WATER SECURITY PLAN. The approval of the plan by the Legislative Council provided legal authority to implement the planned interventions and measures and to include the investment requirements in the annual budget appropriations.

Summary of Key Initiatives and Outcomes of the Provincial Integrated Water Security Plan:

1

Water Source Diversification. The Provincial Government initiated a Bulk Surface Water Project through a public-private partnership (PPP) to diversify and expand water sources, considering the over dependence on scarce groundwater sources.

2

Increased local investments. Local governments successfully mobilized funds from national government grants and private partners, such as the Coca-Cola Foundation Philippines, to invest in water supply, sanitation and water resource management projects. Innovative financing schemes were also adopted for service provision and payment for ecosystem services for water resource management projects.

3

Comprehensive Reforestation Development Plan. The Provincial Government developed and implemented a province-wide Reforestation Development Plan (RDP), targeting high water recharge areas based on hydrologic studies.

4

Improved Management of Water Supply Provision. A local government implemented a Central Management System (CMS) for Water Service. This utility reform tool centralized the management of small, community-based water providers under the oversight of the local government, resulting in improved water service delivery and reliability.

5

Watershed Management Partnerships and Sustainable Livelihoods. Local governments established partnerships with the private sector (Coca-Cola Foundation Philippines), People's Organizations, and watershed communities. These collaborations engaged farmers and women in activities like forest patrolling, soil conservation, and agroforestry, promoting sustainable farming practices to protect forests from degradation.